

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

SOLID AND HAZARDOUS WASTE DIVISION

SOLID WASTE GUIDELINE #1

PETROLEUM STORAGE TANK (PST) WASTES

Introduction

This document provides guidelines for the disposal of wastes which are generated by the removal and decommissioning of petroleum storage tanks (PSTs). It is intended to provide the necessary information to tank owners, tank removal contractors and tank decommissioners so that each type of PST-related waste is tested, treated and disposed in accordance with the Wyoming solid and hazardous waste rules and regulations. This revision (September 9, 1994) to the original guideline makes the guideline specific to petroleum storage tanks, updates waste characterization requirements (EP vs TCLP toxicity characterization), clarifies and better organizes the original guideline and formats the guideline consistent with other department guidance.

As defined in Chapter 8 (Special Waste Management Standards) of the Wyoming solid waste rules and regulations, a petroleum storage tank is any underground or above ground storage tank that has been taken out of service and which contained any substance regulated under Subtitle I of the federal Resource Conservation and Recovery Act (RCRA) including, but not limited to storage tanks that have held gasoline, diesel fuels, and used and unused motor oils.

Under state hazardous waste rules and regulations and RCRA, PST wastes may be classified as hazardous. Therefore, before PST wastes can be disposed at a permitted solid waste management facility within Wyoming, the PST waste generator should:

1. Determine his/her hazardous waste generator status and
2. Chemically test the PST wastes (if the hazardous waste generator status requires that characterization be done).

Please be advised the disposal facility (landfill) operator can and may impose more stringent standards than those found in this guideline.

Determining Generator Status

To determine if the PST wastes generated must be chemically tested prior to disposal, the waste generator must first know if any other wastes generated are considered hazardous and regulated under state law and RCRA. Generators should be advised that under these laws, it is the generator's responsibility to identify and characterize all hazardous waste which is generated.

Hazardous waste generators who generate over 1000 kilograms (2200 lbs.) of hazardous waste or more than 1 kilogram of acutely hazardous waste per month are regulated by the U.S Environmental Protection Agency (EPA) as Large Quantity Generators (LQGs). Generators who generate between 100 and 1000 kilograms (220 to 2200 lbs.) of

hazardous waste and no more than 1 kilogram of acutely hazardous waste per month are regulated by the EPA as Small Quantity Generators (SQGs). LQGs and SQGs must handle their hazardous waste at a RCRA-permitted treatment, storage or disposal facility. Hazardous waste generators who generate less than 100 kilograms (220 lbs.) of hazardous waste and no more than 1 kilogram of acutely hazardous waste per month are considered to be Conditionally Exempt Small Quantity Generators (CESQGs) by the EPA and may dispose of their wastes at permitted sanitary or industrial landfills, provided the Wyoming Department of Environmental Quality (DEQ) and the facility (landfill) operator approve.

The DEQ or the EPA can be contacted for additional information regarding the state and federal hazardous waste programs.

Once a generator determines his/her hazardous waste generator status, the generator should evaluate the potential impact of PST wastes on his/her generator status. Table 1 is designed to assist generators in evaluating this impact.

To use Table 1, the generator should find the monthly amount of non-PST hazardous waste generated (left column). The number in the right column of Table 1 (TESTABLE QUANTITY of PST Waste) lists the amount of PST waste that can be generated in a single month before chemical testing of the PST waste is required.

For example, if a generator generates 55 lbs. (approximately 5 gallons) of non-PST hazardous waste in a month, the generator can generate up to 165 lbs (approximately 15 gallons) of PST waste in that month before chemical testing of the PST waste is necessary.

TABLE 1

WASTES GENERATED ON A MONTHLY BASIS

Non-PST Hazardous Waste	TESTABLE QUANTITY of PST Waste
0 lbs.	220 lbs. (20 gallons)
55 lbs. (5 gallons)	165 lbs. (15 gallons)
110 lbs. (10 gallons)	110 lbs. (10 gallons)
165 lbs. (15 gallons)	55 lbs. (5 gallons)
>220 lbs. (20 gallons)	All wastes must be tested

NOTE: Gallon values are approximate volume equivalents.

Please be advised that PST wastes removed during decommissioning are considered to be generated when they are removed from the PST. Therefore, for on-site decommissioning, the PST owner is considered the waste generator. However, for PSTs decommissioned at a state permitted decommissioning facility, the PST decommissioning facility operator is considered the waste generator.

PETROLEUM PSTs (Gasoline, Diesel, Fuel Oil Product)

I. Petroleum Product

A. Usable petroleum products should be removed from the PSTs and sold or reused as products.

II. Petroleum Storage Tanks (PSTs)

A. All PSTs must be decommissioned at a state permitted PST decommissioning facility prior to any use/reuse or disposal of the tank. Conversely, PSTs may be decommissioned on-site after receiving prior approval for the decommissioning activity from DEQ. PSTs should be decommissioned on an impermeable pad which is

constructed to control surface water run on and run-off. PSTs may not be decommissioned at a municipal landfill.

Owners of underground PSTs may use the tank for an above ground purpose without prior decommissioning of the tank under the following conditions:

1. Only the tank owner may reuse the tank for an above ground purpose.
2. The tank must store only petroleum product similar to the product stored in its underground application.
3. The underground PST must be structurally acceptable for an above ground storage purpose and must have maintained its original structural integrity.
4. The location and use of the underground PST for above ground purposes must comply with local fire ordinances and be approved by the local fire marshall.

B. All PSTs, except those being reused as described above, must be "opened" in accordance with the requirements, standards and/or guidelines of the SHWD, the Wyoming Occupational Health and Safety Commission, the American Petroleum Institute, and local and state fire marshals.

C. Once opened, all sludge, scale, and waste product must be removed from the PST and accumulated in a tank or container which is in compliance with 40 CFR Part 265, Subpart I or Subpart J. A 55-gallon drum in good condition may meet the definition of a container. All accumulated sludge, scale, and waste product must be counted toward the volume of PST waste generated.

D. All PSTs must be thoroughly cleaned using an appropriate cleaning method/device. Any rinseate generated by this step must be containerized and counted toward the volume of PST waste generated. Conversely, rinseate may be discharged to the local wastewater treatment plant or discharged to an underground injection well with approval from the DEQ/Water Quality Division and the wastewater plant operator or injection well operator.

E. If the PST is to be disposed, landfill operator approval must be obtained and the PST should be cut into pieces of a size approved by the landfill operator. As an alternative to disposal, steel tanks may be sold as scrap following proper decommissioning. All scrap metal, whether disposed or sold, should be removed from the decommissioning site as soon as possible.

In general, the department recommends that decommissioned PSTs not be used to store potable water and human and animal foodstuffs. Prior to using any decommissioned PST to store potable water and human and animal foodstuffs, an authorization must be obtained from the department.

III. Wastes Contained in Petroleum PSTs

A. All sludge, scale, waste product, and rinseate generated as a result of PST decommissioning must be containerized separately in 55-gallon steel drums at the decommissioning site. Each drum should be filled not more than one-third (1/3) full and be properly identified and labeled.

B. If the total amount of the PST waste is GREATER THAN THE TESTABLE QUANTITY OBTAINED FROM TABLE 1, samples must be taken from each waste type (sludge, scale, waste product, and rinseate) and combined into a single composite sample and analyzed by the following chemical testing procedure:

Characteristic	Regulatory Limit
Arsenic*	5.0 mg/l
Barium*	100.0 mg/l
Cadmium*	1.0 mg/l
Chromium*	5.0 mg/l
Lead*	5.0 mg/l
Mercury*	0.2 mg/l
Selenium*	1.0 mg/l
Silver*	5.0 mg/l
Corrosivity	pH < 2 or pH > 12.5
Ignitibility (flash point)	<140 degrees F

* Must prepare and analyze sample using the Toxicity Characteristic Leaching Procedure (TCLP) as described in 40 CFR Part 261

C. The mass of all PST waste which is determined to meet the criteria of a characteristic hazardous waste as described in the table above, should be counted toward the generator's hazardous waste generator status. All hazardous waste generated by SQGs and LQGs must be shipped to a RCRA-permitted facility for treatment, storage or disposal. PST wastes which are generated by CESQGs or are generated by SQGs or LQGs and are nonhazardous can be disposed at landfill facilities within the state.

Nonhazardous waste may be solidified in preparation for disposal at a permitted landfill. The waste in each accumulation drum should be mixed in an appropriate ratio with a solidifying agent such as portland cement, flyash, or cement kiln dust. The waste in each drum should be thoroughly mixed so that the solidified waste is homogeneous. The resulting waste must have no free liquids, as measured by the Paint Filter Liquids Test (EPA Method 9095) which is attached to this document. Permission from the owner/operator of the landfill facility must be obtained before any solidified wastes are delivered for disposal.

IV. Contaminated Soils from Petroleum PSTs

All contaminated soils which are excavated during petroleum PST remediation must be managed in accordance with solid and hazardous waste rules and regulations and Solid Waste Disposal Guideline #2 (Petroleum-Contaminated Soils).

USED/WASTE OIL PSTs

I. Used Oil in PSTs

A. Used/waste oil remaining in PSTs should be delivered to a used/waste oil reclaimer for recycling. In addition, the waste oil may be burned for energy recovery if the provisions of Chapter 1, Section 1(l) of the solid waste rules and regulations and EPA and DEQ/Air Quality Division requirements are met.

II. Used/Waste Oil Tanks

A. Used/waste oil PSTs should be decommissioned by the same procedures which are used for petroleum PSTs.

III. Wastes Contained in Used/Waste Oil PSTs

A. All sludge, scale, waste product, and rinseate generated as the result of decommissioning the inside of used oil PSTs must be containerized separately in 55-gallon steel drums at the decommissioning site. Each drum

should be filled not more than one-third (1/3) full and be properly identified and/or labeled. Rinseate may be discharged to the local wastewater treatment plant or discharged to an underground injection well with approval from the DEQ/Water Quality Division and the wastewater plant operator or injection well operator.

B. If the total amount of the used oil PST waste is GREATER THAN THE TESTABLE QUANTITY OBTAINED FROM TABLE 1, samples must be taken from each waste type (sludge, scale, waste product and rinseate) and combined into a single composite sample and analyzed by the following chemical testing procedure:

Characteristic	Regulatory Limit
Arsenic*	5.0 mg/l
Barium*	100.0 mg/l
Cadmium*	1.0 mg/l
Chromium*	5.0 mg/l
Lead*	5.0 mg/l
Mercury*	0.2 mg/l
Selenium*	1.0 mg/l
Silver*	5.0 mg/l
TOX* (Total Organic Halogens)	0.13 mg/l
Corrosivity	pH < 2 or pH > 12.5
Ignitibility (flash point)	<140 degrees F

* Must prepare and analyze sample using the Toxicity Characteristic Leaching Procedure (TCLP) as described in 40 CFR Part 261

C. The mass of all PST waste which is determined to meet the criteria of a characteristic hazardous waste as described in the table above, should be counted toward the generator's hazardous waste generator status. All hazardous waste generated by SQGs and LQGs must be shipped to a RCRA-permitted facility for treatment, storage or disposal. PST wastes which are generated by CESQGs or are generated by SQGs or LQGs and are nonhazardous can be disposed, once solidified, at landfill facilities within the state.

For PST wastes exceeding only the TOX limit of 0.13 mg/l, the waste generator has the following options:

1. The waste may be handled as a hazardous waste as described above in this section; or
2. The waste generator may resample and test the PST waste for the halogenated volatile and semi-volatile constituents listed in Appendix A by using the TCLP. If retesting indicates the PST waste exceeds any of the regulatory limits for the halogenated volatile and semi-volatile constituents listed in Appendix A, the waste must be managed as a hazardous waste.

Nonhazardous waste should be solidified in preparation for disposal at a permitted landfill. The waste in each accumulation drum should be mixed in a 1:1 ratio with a solidifying agent such as portland cement, flyash, or cement kiln dust. The waste in each drum should be thoroughly mixed so that the solidified waste is homogeneous. The resulting waste must have no free liquids, as measured by the Paint Filter Liquids Test (EPA Method 9095) which is attached to this document. Permission from the owner/operator of the landfill facility must be obtained before any solidified wastes are delivered for disposal.

IV. Contaminated Soils from Waste/Used Oil PSTs

All contaminated soils which are excavated during used oil PST remediation must be managed in accordance with solid and hazardous waste rules and regulations and Solid Waste Disposal Guideline #2 (Petroleum-Contaminated Soils).

Further Information

Please be advised that the above procedures for treatment and disposal of PST-related wastes are only recommendations from the Department. Further information can be obtained from the following Solid and Hazardous Waste Division offices:

Solid and Hazardous Waste Division

Casper	473-3450
Cheyenne	777-7752
Lander	332-6924

Signed,

David A. Finley
Administrator
Solid and Hazardous Waste Division

October 26, 1994

Date

Attachments

Appendix A "Toxicity Characteristic Constituents"
Paint Filter Liquids Test - EPA Method 9095

APPENDIX A

Toxic Characteristic Leaching Procedure

TCLP Constituent

Regulatory Level

Metals

Arsenic *	5.0 mg/l
Barium	100.0 mg/l
Cadmium	1.0 mg/l
Chromium	5.0 mg/l
Lead *	5.0 mg/l
Mercury *	0.2 mg/l
Selenium	1.0 mg/l
Silver *	5.0 mg/l

Herbicides and Pesticides

Endrin *	0.02 mg/l
Lindane *	0.4 mg/l
Methoxychlor *	10.0 mg/l
Toxaphene *	0.5 mg/l
2,4-Dichlorophenoxyacetic acid (2,4-D) *	10.0 mg/l
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP Silvex) *	1.0 mg/l

Organochlorine Pesticides

Chlordane *	0.03 mg/l
Heptachlor* (and its hydroxide)	0.008 mg/l

Volatile Organics

Benzene *	0.50 mg/l
Carbon tetrachloride *	0.50 mg/l
Chlorobenzene *	100.0 mg/l
Chloroform	6.0 mg/l
1,2-Dichloroethane	0.50 mg/l
1,1-Dichloroethylene	0.70 mg/l
Tetrachloroethylene	0.7 mg/l
Trichloroethylene *	0.5 mg/l
Vinyl chloride	0.20 mg/l

APPENDIX A (Continued)

Semi-Volatile Organics (Base/Neutral/Acid)

m-Cresol*	200.0	mg/l
o-Cresol*	200.0	mg/l
p-Cresol*	200.0	mg/l
1,4-Dichlorobenzene	7.5	mg/l
2,4-Dinitrotoluene	0.13	mg/l
Hexachlorobenzene*	0.13	mg/l
Hexachloro-1,3-butadiene	0.5	mg/l
Hexachloroethane*	3.0	mg/l
Methyl ethyl ketone	200.0	mg/l
Nitrobenzene	2.0	mg/l
Pentachlorophenol*	100.0	mg/l
Pyridine*	5.0	mg/l
2,4,5-Trichlorophenol*	400.0	mg/l
2,4,6-Trichlorophenol*	2.0	mg/l

* May be used as or in conjunction with pesticides (algi-, bacti-, fungi-, herbi-, and insecti- cides)